

**WHAT STUDENTS KNOW AND DO ABOUT CAREER CHOICES**  
**and**  
**WHAT KEY STAKEHOLDERS NEED TO KNOW AND DO TO**  
**HELP INFORM STUDENT CAREER CHOICES**

Institute for Educational Leadership

**Background**

The Mon Valley Education Consortium (MVEC) had the lead responsibility to survey students during both years of the *GetTech* project. Strategic advice was provided by the Center for Workforce Development (CWD) at the Institute for Educational Leadership (IEL) on the design of the surveys and in the analysis of the results. One of the original purposes of the surveys was to assess the influence that exposure to *GetTech* “curriculum” in the classroom had on the individual student career interests and course taking choices. It was recognized in the design of the overall project that changing student interest in potential career options as well as altering their course selections (specifically in mathematics and the sciences) are two important goals to providing the manufacturing as well as other “high technology” sectors with an increased “prepared pipeline” of new workers. Additionally, the surveys were to inform educators, and other key stakeholders such as industry associations and government agencies such as the U.S. Dept. of Commerce about how to effectively target resources to help young people become aware of the critical academic and career centered skills they need to acquire for the many jobs in our society that form the backbone of the economy.

This report is a companion document to others provided by the Center for Workforce Success (CWS) and MVEC to the U.S. Department of Commerce. The purpose of this report is to provide an analysis of the results of the two student surveys. It is not possible to provide information on the effects of exposure to the *GetTech* “curriculum” for all of the students who completed the survey because more students completed the survey in the second year than were exposed to any *GetTech* materials. For those students who were exposed to *GetTech* materials during the course of the project there were additional issues that prevented an analysis of the influence the materials had on individual choices. These challenges were addressed in the CWS and MVEC reports.

This report centers on lessons that can, and have already been gleaned, from the surveys. These lessons focus on implications for actions that can be taken by those institutions involved directly in the education enterprise and key stakeholders representing business interests and government. For example, an unanticipated benefit came from the lessons learned from the first year survey. The results of that survey helped MVEC develop a strategy for a comprehensive plan to embed a career literacy initiative, called The Future is Mine (TFIM), throughout the whole region and within all the schools. Both surveys are being used to develop clear messages to all of the stakeholders, direct efforts to change the way schools help students make course selections, and help schools and parents understand the importance of career choices and course selections. As will be seen in the following analysis there are considerable “systems change” implications revealed in the survey results. MVEC already has started using the survey results and it intends to continue surveying students to drive the TFIM agenda forward.

## **Focus of the Surveys**

In both years there were four major categories of inquiry. These included:

1. What careers are students interested in exploring?
2. How have students learned about career options?
3. How will students' course choices and education plans beyond high school help them become prepared for the careers they choose?
4. Where and how do they access and use computers and the Internet.

Seventeen questions were included each year; however, results from Year 1 revealed that modifications were in order, particularly in section II and IV, due to the obvious range of interpretations from the respondents yielding the results unclear. Due to timing challenges in Year 1 it was not possible to beta test the instrument prior to sending it to the schools. The modifications made in Year 2 to those questions did improve the quality of responses.

There were not sufficient funds for MVEC to undertake the costly analysis, question by question on the Year 1 survey, in large part because the original analysis was done by hand. In the second year the questions were machine scored, and where appropriate in the discussion below, 2004 data will be cited. There are, however, clear trends and patterns in the responses that have import for each group of stakeholders. The analysis is clustered by the four categories of inquiry.

The first year survey (Spring of 2003) was sent to 29 middle schools for distribution to the seven and eighth grades. Twenty-two middle schools responded, with a total of 3,779 students. In the second year the ninth grade was added as a targeted grade and the number of schools was expanded to 48. In the Spring of 2004, 3,115 students returned the survey. In both years the results were tallied by grade and sex of students. Of the 3,048 students who indicated their gender on the survey, 1,521 were female and 1,527 were male, thus providing a very even split of male and female respondents.

## **Trends and Patterns:**

### **1. Career Interest**

The two questions that helped to set the stage address type of jobs and factors student considered important about jobs. In Year 1 the students were asked to rank their choices on a scale of 1 to 5, however many students did not apply a numerical value so the top priorities could not be established. Nevertheless, what was clear in the first survey is students did not show interest in Manufacturing, Scientific Research and Engineering. The scoring methodology was refined in the second year. The highest career families of the 19 job families were Arts, Entertainment, Sports, and Media with 1800 students selecting it as one of their top three. Law and Health and Medicine tied for second as the

two job families next in popularity (selected by 850 students). In a third place tie were Protective Services and Education, Training, and Library with approximately 550 students selecting those options. The interest in the critical career families for manufacturing engineering and architecture, information technology, installation, maintenance and repair careers were in the bottom grouping, particularly for females.

Students were asked to rank 12 factors that influence their decisions about careers. In the first year, many students did not differentiate among the 12 factors to provide a clear ranking though salary was a consistent high importance factor. In the second year the instructions yielded the top three factors for both male and female students that influence their thinking about potential careers. They are a) salary; b) level of education required; and, c) work hours, in that order. No other factors were close in the number of times selected by students.

**Implications for the stakeholders:** It appears it will take considerable exposure and salesmanship to persuade students that careers in manufacturing, science and engineering are desirable. MVEC observed two lessons that industry associations might want to consider regarding how to target messages to young people, since it appears that television might be the source of the top career picks (is this why you came to this conclusion?). The first, is use television and other visual media to tell the story. The use of television requires a stretch of the imagination about how this may occur, but perhaps discussions with key manufacturing advertisers may yield some fruitful ideas as most of the large companies are sponsors of education and career preparation initiatives that could perhaps become a part of a career marketing story. Second, career exploration information presented on websites and in other formats should include salary, level of education required, and information concerning work hour expectations, at a minimum, if it is to engage middle school students. Although job satisfaction, job fit, and service to others are important career concepts for long-term career thinking, they are not on students' radar in middle school and probably not even into high school.

## **2. Learning about Careers**

In this cluster of questions students were asked a) who influences their career choices the most; b) when it is appropriate to start learning about careers; and, c) what sources of information are used for finding out about careers.

In both years the clear results in terms of with whom the student discusses career choices was first his/her mother and then his/her father. School personnel did not rank high either year, including counselors. In the 2004 survey in order of preference, the top five choices for students to discuss careers with were: their mothers, fathers, peers, adult friends, and siblings. Counselors and English teachers tied for 6th place but students were twice as likely to go to a parent or a peer than they were to go to either of these for career guidance. Grandparent was not one of the options offered but appeared as a write-in by 305 students.

When asked about when they needed to start thinking and learning about careers most students responded either middle school or high school to this question with female students favoring middle school by a small margin over high school, while male students favored high school by a small margin over middle school.

Students were asked the same question in both years about what resources they used to research information about careers. In the first year no clear pattern emerged in terms of top choices; however by the second year, Internet sites, television, and computer programs, in that order ranked the highest. Print media, including using the library and newspapers were only used by a small percentage of students. The high ranking of television (a medium not generally known for organizing resources about career options) is no doubt a reflection of the same influence it has on making some careers seem more attractive than others.

A further set of probes sought to determine which search engines and top websites were used by students. For search engines, Google and Yahoo far outstripped all other sources and the choices on career-focused websites shows a range of sites with no one being overwhelmingly dominate.

The top websites for career research and the number of times they were mentioned:

Monster.com – 62	Careers.com - 33	Hotjobs.com - 16
Keys2Work.com – 53	Tuitions.com – 26	BLS.gov - 17
Jobs.com – 35	CareerLink – 18	Pheaamentor.org – 11

**Implications for the stakeholders:** Noted by its absence in both years was GetTech, but recall, in the first year no students had yet been exposed to any GetTech materials. With the results from the refined response in the second year, the implications for industry associations are to using search engines to their advantage and/or linking their message within the major websites that being used more frequently in schools and job training sites. Another strategy for industry associations to employ is to partner – indeed encourage – education organizations in states and localities to launch career literacy initiatives such as the one organized by MEVC and provide materials through such outlets. A logical starting point may be areas with high concentrations of manufacturing companies.

One of the lessons noted by MEVC as the results of the first survey was the lack of the focus by the schools in providing information and support services to parents about what they can do to help their own children explore a range of careers. Schools, in concert with workforce development and economic development organizations in communities and even across a state are logical partners to build information campaigns targeted to parents and guardians as well as the students themselves. Many governors and other state and local elected leaders have targeted key industry sectors to help grow their economies and attention to the “pipeline” generation and their parents are an important, but sometimes overlooked strategy. Included in any “educational campaign” should be an emphasis on helping both parents and students understand course selection in eighth grade are in many ways gateways to student’s options in high school and beyond.

### 3. Making Educational Decisions

There are two sections in this cluster of questions. The first centered on what was occurring during middle school and projections about high school course takings. The second category addressed future plans.

#### A. Trends in Course Preferences and Understanding of Influence on Career Choices

Students ranked high school courses from most favorite to least favorite.

In 2003 Physical Education and Art and Music were the clear overall most favorite from the respondents. In 2004:

Male students ranked the courses as follows:  
as follows:

- Physical Education
- Technology
- Art and Music
- Math and Science
- History, Civics, Social Studies
- English and Language Skills

Female students ranked the courses  
as follows:

- Art and Music
- Math and Science
- Physical Education
- English and Language Skills
- Technology
- History, Civics, Social Studies

These are “likes” answers but as seen in the responses to the next question youth did understand, at least to some degree, the selection of the “right” courses matter most as it relates to career preparation.

Students were asked to reflect on their “favorite career choice” and then rank the courses most important to prepare for that choice. When the rankings for both male and female students are combined, students ranked courses from most to least important for preparing them for their favorite career choice as follows:

- Math
- English and Language Skills
- Science and Technology
- Art and Music
- Physical Education
- Vo-Tech
- History, Civics, and Social Studies

Further probes went deeper. Two questions focused on the all important math and science class(es). More students of both genders were enrolled in Basic Math (approximately 55%) classes than in Pre-College Math (45%). More students of both genders were enrolled in Basic Science courses (72%) than in Pre-College Science courses (28%).

Although math is viewed as an important class for career preparation by over two-thirds of the students surveyed, it was not one of the most favorite high school courses of either

male or female students. Fifty-five percent of students are enrolled in basic math classes and 45 percent in pre-college math. Science was also seen as a relatively important class for career preparation but more than twice as many (72 percent) students were enrolled in basic science classes versus pre-college science courses. Since the survey group was students from 7<sup>th</sup>, 8<sup>th</sup>, and 9<sup>th</sup> grade, and the survey results are not broken out by grade, it may be that most of the 9<sup>th</sup> graders are in pre-college math and science courses. That many more students are in pre-college math than in pre-college science reflects the students' ranking math higher than science as most important for preparing them for their favorite career choice. The survey results for this question, as most of the others, would yield provide much more information for analysis if it was broken out by grade level.

### **B. Future Plans**

Students were asked to project what their plans were for a course of study while still in high school as well as their plans for post secondary further preparation. The results are:

- Attendance at a Vocational-Technical School during high school was anticipated for approximately one-fourth of the middle school students.
- Where they planned to seek further education shows that four-year college/university ranked the highest with approximately two-thirds of all students asserting this would be their chosen path.
- The ranking for community colleges choices was in the mid-teens percentage for all three-grade levels.
- Military enlistment was always a smaller percentage for all students with the highest for 7<sup>th</sup> grade students at ten percent falling to seven percent for 9<sup>th</sup> graders.

**Implications for the Stakeholders:** Obviously not all courses are equal and the incredibly high percentages of students being placed, mainly by teachers, into less rigorous courses in math and sciences should be a cause for concern of all stakeholder groups involved. This was not a new set of issues, but a stubborn set nonetheless. These two surveys simply added to the evidence that was well established from a wide array of other studies and reports. For example, Achieve, a collaborative initiative between business leaders and the nations' governors, recently released a state-by-state analysis about the problems attendant to course work selection and content of the courses.

The solutions to changing these patterns are complex and most must be undertaken within the education "enterprise" itself. Organizations that are a part of that enterprise, such as MVEC, are critical to helping find the right solutions and emulating their role in other areas of the country to promulgate a career literacy agenda has merit.

Student answers about future plans represented similar answers through other surveys conducted over a long number of years by the federal government, states, schools, and others. The presumed next step on the ladder for youth is a four-year college/university, with the ranges typically running in the 60 to 70 percent ranges, as was the case here. If

history is a guide the reality will be different with about 25 percent attending and completing these institutions.

Locally, MVEC has appropriately determined that it is important not to leap to any particular conclusions regarding the future plans issue but they do plan to track from year to year. This may well be an area where MVEC in concert with other local partners can do further probes and perhaps initiate studies to gain a deeper understanding of the relationships between courses taken in middle schools and that relationship to course of studies pursued in high school and beyond.

#### **4. Use of the “New Technologies”**

A series of questions probed how and where students were accessing and for what purposes they were using computers and the Internet. This probe was included in the survey for a variety of reasons, one being that *GetTech* is a web-based career information program but there was also the recognition that use of information technologies are rapidly becoming a basic skill area required for most jobs in the economy.

The answers reflect some inequities in terms access. In one education center about one third of the students report that they never used a computer for non-Internet activities and in four other schools the percentages ranged between 18% and 22%. All others reported never using the computer for non-Internet usage at 15% or below. Internet use varied slightly by grade level in some schools and by location of the school, indicating, no doubt, either some potential inequities of resources or instructional strategies used in the schools.

In response to the “where” do they most often use computers there is again a “have” and “have not” pattern. Some students provided more than one response to this question but 54% indicated that they used computers at home most often, while 22% chose school, 18% most often use a friend’s computer, and 6% most often use a library computer.

In response to questions about what purpose(s) computer is used for, games were the clear winner for the male students, ranking third for females, and for females school work ranked first. Career research was included in both genders lists.

**Implications for Stakeholders:** The primary stakeholders that can benefit from the information in this category reside in the local region. MVEC, armed with the results of the two surveys, can target attention to the schools that are lagging behind (as they intend to do). But, there are other organizations that could assist youth in gaining access to computers, e.g. United Way. The results of the survey could perhaps be used to help target other community resources, to the neighborhoods where youth appear to lack the needed access to computers and the Internet.

The implications from the surveys point to the web as the most appropriate place to invest career exploration initiatives, as *GetTech* has done. Again the surveys offer a hint for attracting more students. Since playing computer games is one of the favorite

pastimes of this generation, exploration should be made about how to embed career information into computer game formats as this may be one of the best ways to get the most important career development messages to this age group.

### **Final Note**

This analysis is aimed at showing the value of the two surveys of students as a part of the *GetTech* project. While there were shifts in the project and unrealized expectations from the original plan the end result appears to be positive. The value of systematically collecting data from a key target population, the students, is borne out by the plans of MVEC to institutionalize the survey as a part of its ongoing work. For CWS, the lessons learned in this pilot project will no doubt bear long-term benefits for the continuous improvement of the *GetTech* initiative.